



Hope Bay Mining Ltd.
Suite 300
889 Harbourside Drive
North Vancouver, BC
V7P 3S1
Phone 604 985 - 2572
Facsimile 604 980 - 0731
www.newmont.com

August 12, 2009

Phyllis Beaulieu
Manager of Licensing
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU
X0B 1J0
(867) 360-6338

**Re: Water License 2BE-HOP0712 HOP-3 Toxicity Testing Data and 2BB-BOS0712
BOS-4 Toxicity Testing Data – Supplement to 2008 Annual Reports**

Dear Ms. Beaulieu,

Please find attached the toxicity testing data for monitoring stations HOP-3 (Part J Item 3 of 2BE-HOP0712) and BOS-4 (Part J Item 4 of 2BB-BOS0712). Preliminary results of this sampling had been previously provided in the monthly monitoring reports. However, results for sampling at these monitoring stations were not included in the 2008 Annual Reports for licenses 2BE-HOP0712 and 2BB-BOS0712 as stated in the INAC letters to Hope Bay Mining Ltd. dated July 20, 2009 and July 16, 2009, respectively.

As noted in the annual reports, results for both stations demonstrated the non-acute toxicity of the samples. The data attached to this letter support this.

Please contact me at Chris.Hanks@newmont.com if you have additional questions or require any further information relating to the contents of this letter.

Sincerely,

Chris Hanks
Director, Environmental and Social Responsibility
Hope Bay Mining Ltd.

Result Summary

 Client: ALS106
 Reference: 08-1782-01-TRD

Client: ALS Laboratories; operation Yellowknife

Sample: BOS-4

Collection: collected on 2008/10/06 at 1130 by Not Given

Receipt: received on 2008/10/07 at 1100 by EV/AL

Containers: received 2x20L Pail at 7 °C, in good condition with no seals
 and no initials

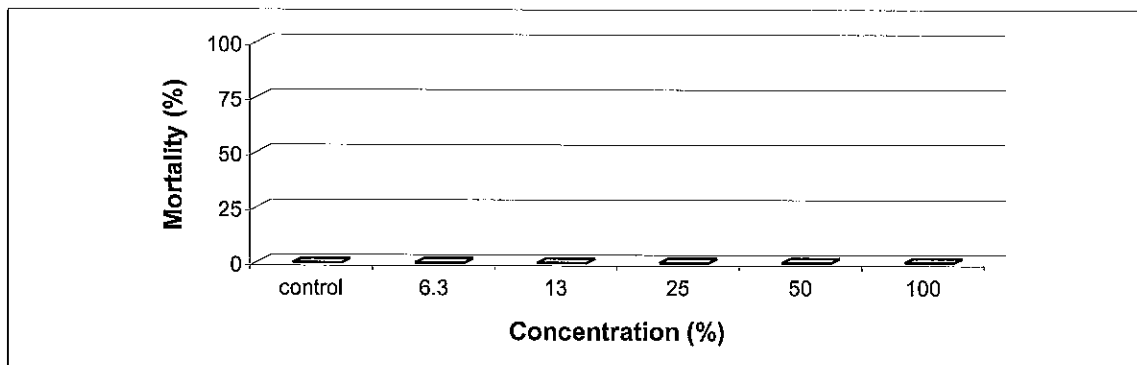
Description: type: Not Given, collection method: Not Given

Test: started on 2008/10/10 ; ended on 2008/10/14

Result:

	Endpoint (96-hour)	Value (%)	Confidence Limits (95%) lower upper	Method Calculated
Acute:	LC50	>100		could not be calculated
(mortality)	LC25	>100		could not be calculated

Notes: LC25 & LC50, concentrations lethal to 25% and 50% of the test population



 Authorized by S. Krishnappa, B.Sc., Quality Coordinator
 The test data and results are verified correct.

Our liability is limited to the cost of the test requested. The test results only relate to the sample as received. No liability in whole or in part is assumed for the collection, handling or transport of the sample, application or interpretation of the test data or results.

Test Conditions

Client: ALS106 Reference: 08-1782-01-TRD

Method: Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout, 2000. Environment Canada, EPS 1/RM/13. Second Edition (amended May 2007).

Test type: Trout 96-h Static Acute Test (HQ 4.4.4.1)

Species: *Oncorhynchus mykiss*

Organism source: Sun Valley Trout Farms (Batch 20080903TR)

Acclimation: 37 days (must be ≥ 2 weeks)

Stock mortality: 0.05% (seven days preceeding testing)

Sample initial chemistry: pH: 8.1; EC: 55 ($\mu\text{S}/\text{cm}$); DO: 9.1 (mg/L); temperature: 14 °C
hardness (mg CaCO_3/L): 10; colour: colourless; odour: odourless

Sample holding time: 4 days (must be ≤ 5 days)

Sample storage: 4 $\pm$ 2°C in darkness

Test vessel: The test was conducted in 22 L plastic pails with polyethylene liners

Test volume: 20 Litres (depth of solution in each test vessel $\geq 15\text{cm}$)

Sample pre-treatment: All test solutions and controls were pre-aerated for 30 minutes
Dissolved oxygen in 100 % sample was 9.1 mg/L after pre-aeration
The sample was not filtered or pH adjusted prior to or during testing

Loading density: 0.299 g/Litre (must be ≤ 0.5 g/Litre)

Control/dilution water: Dechlorinated City of Calgary water acclimated to test conditions

Test concentrations: 5 effluent concentrations (6.3, 12.5, 25, 50, 100% (v/v) plus a negative control)

Test replicates: One replicate per treatment; 10 fish per replicate

Feeding: Fish are not fed 24 hours before test initiation and no feeding during test

Measurements: pH, conductivity, dissolved oxygen and temperature measured daily

Aeration: All treatments aerated at 6.5 ± 1 mL/min/L by oil-free compressed air
passed through airline tubes connected to disposable air stones

Lighting: Overhead full spectrum fluorescent lights; 100-500 lux at surface

Photoperiod: 16h light:8h dark

Test temperature: 15 $\pm$ 1°C

Endpoint: Mortality, 96-h LC50 (with 95% confidence limits)

Test validity: The control had 100% survival (must $\geq 90\%$)

Reference toxicant: 96-h test with Phenol ($\text{C}_6\text{H}_6\text{O}$) initiated September 18, 2008; current results
(96-h LC50 and 95% confidence limits) = 1.07 (1.02-1.11) log (mg/L Phenol)

Note: Outlined sections are protocol deviations explained on the comment page; v/v, volume per volume

Test Data

Client: ALS106 Reference: 08-1782-01-TRD

Test Log:

Date	Day	Time	Technician	Comment/Observation
2008/10/10	0	1045	D. Lalonde/ E. Vinish	test fish loaded at 1045 h
2008/10/11	1	1045	N. Lavoie/ E. Vinish	all test fish appear normal
2008/10/12	2	1015	E. Vinish/ N. Lavoie	all test fish appear normal
2008/10/13	3	1100	N. Lavoie/ E. Vinish	all test fish appear normal
2008/10/14	4	0900	D. Lalonde/ E. Vinish	all test fish appear normal

Chemistry:

Conc. (%)	control	6.3	13	25	50	100		
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Day

pH (units)

Day	0	1	2	3	4		
0	7.4	7.4	7.4	7.4	7.5	7.7	
1	7.7	7.7	7.7	7.7	7.7	7.8	
2	7.5	7.5	7.5	7.5	7.5	7.7	
3	8.0	7.9	8.0	8.0	8.0	8.0	
4	8.0	8.0	8.0	8.0	7.9	8.0	

Conductivity (µS/cm)

Day	0	1	2	3	4		
0	287	274	259	234	181	64	
1	285	278	262	237	181	67	
2	294	279	263	237	183	70	
3	280	267	261	238	184	69	
4	279	281	266	240	187	64	

Dissolved Oxygen (mg/L)

Day	0	1	2	3	4		
0	9.1	9.1	9.1	9.2	9.1	9.1	
1	8.8	8.7	8.8	8.9	8.8	9.1	
2	9.0	9.1	9.1	9.0	9.1	9.1	
3	8.6	8.7	8.6	8.6	8.6	8.5	
4	9.5	9.4	9.4	9.4	9.4	9.5	

Temperature (°C)

Day	0	1	2	3	4		
0	16	15	15	15	15	15	
1	15	15	15	15	15	15	
2	15	15	15	15	15	15	
3	15	15	15	15	15	15	
4	14	14	14	14	14	14	

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Test Data

Client: ALS106
Reference: 08-1782-01-TRD

Number Alive:

Conc. (%)	control	6.3	13	25	50	100		
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Day

0	10	10	10	10	10	10		
1	10	10	10	10	10	10		
2	10	10	10	10	10	10		
3	10	10	10	10	10	10		
4	10	10	10	10	10	10		

Mortality (%)

4	0	0	0	0	0	0		
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Biology Summary Tables:

Control Fish	Length (cm)	Wet Weight(g)
1	4.5	0.8
2	4.5	0.8
3	4.3	0.5
4	3.7	0.4
5	3.6	0.4
6	4.1	0.7
7	3.5	0.4
8	3.5	0.4
9	4.7	1.0
10	3.9	0.6

Conc. (%)	Group Wet Weight (g)
control	6.0
6.3	5.9
13	6.5
25	6.4
50	6.1
100	5.6

average	4.0	0.6
sd	0.5	0.2
cv(%)	11.2	36.6

Notes: nd, not done; na, not applicable;
 sd, standard deviation; cv(%), coefficient
 of variation

Comments/Statistics

Client: ALS106 Reference: 08-1782-01-TRD

Test Result Comments:

None

Data Analysis:

Endpoints for mortality could not be calculated. No effect occurred.

Protocol Deviations:

None

Test Method: Trout 96h Static Acute Test. (LC50, five or more treatments plus a control)
 HydroQual Test Method Manual, section: 4.4.4.1

Reference: Biological Test Method: Reference Method for Determining Acute Lethality of
 Effluents to Rainbow Trout, 1990. Environment Canada, EPS 1/RM/13.
 including May 1996 and December 2000 amendments.

Test Organism: test species: <i>Oncorhynchus mykiss</i> culture source: Sun Valley temperature (°C): 15 ± 1 dissolved oxygen: saturated stock mortality (last 7d): 0.32% batch number: 20080903TR	Test Design: vol. of test vessel (L): 22 test volume depth: >15 cm replicates per treatment: 1 fingerlings per replicate: 10 loading (g fish/L): <0.5 temperature (°C): 15 ± 1 photoperiod: 16h light: 8h dark light level (water surface): 100-500 lux control/dilution water: dechlorinated tap water
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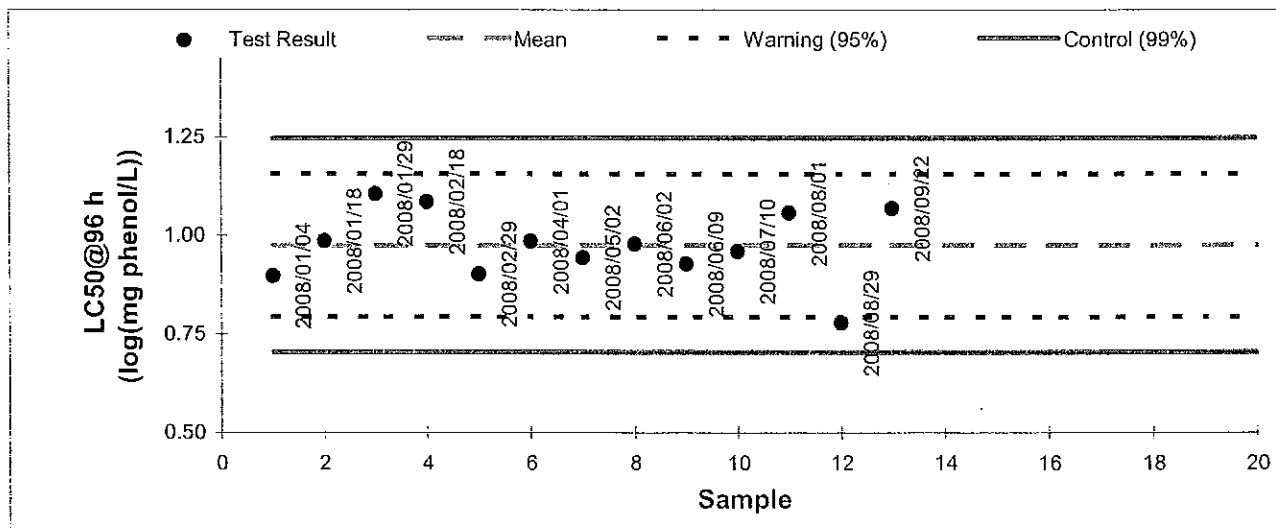
Current Test

toxicant phenol (C ₆ H ₅ OH)				
started on 2008/09/18		ended on 2008/09/22		
Result (LC50 @ 96h)	1.07	log (mg phenol/L); geometric mean		
Confidence Limits (95%)	lower	1.02	upper	1.11

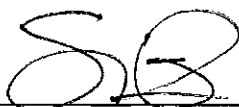
Historical Values

mean	0.97	sd	0.09	cv(%):	9
	lower	upper			
warning limits (±2 sd)	0.79	1.16	(95% confidence limits)		
control limits (±3 sd)	0.70	1.25	(99% confidence limits)		

notes: sd, standard deviation; cv, coefficient of variance



Quality Assurance Unit:



Authorized by S. Krishnappa, B.Sc., Quality Assurance Coordinator
 The test data and results are verified correct.

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Result Summary

Client: ALS106
Reference: 08-1781-01-TRD

Client: ALS Laboratories; operation Yellowknife

Sample: HOP-3

Collection: collected on 2008/10/06 at Not Given by Not Given

Receipt: received on 2008/10/07 at 1100 by EV/AL

Containers: received 1x20L Pail/1x20L Carboy at 7 °C, in good condition with no seals and no initials

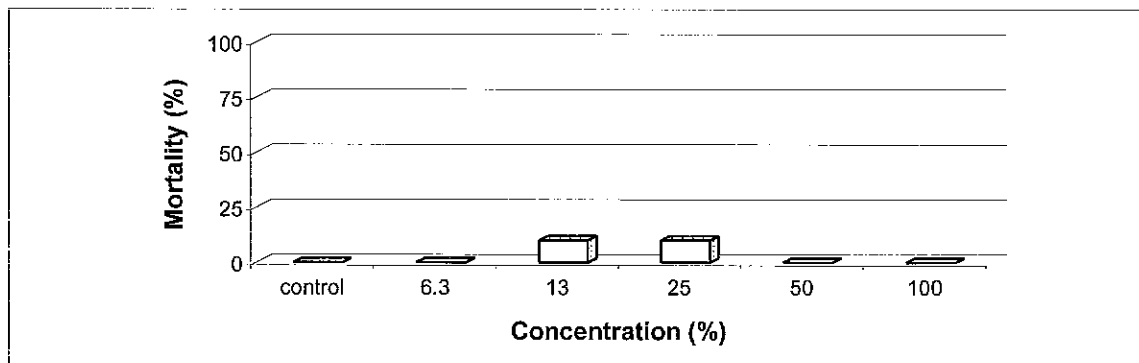
Description: type: Not Given, collection method: Not Given

Test: started on 2008/10/10 ; ended on 2008/10/14

Result:

	Endpoint (96-hour)	Value (%)	Confidence Limits (95%) lower upper	Method Calculated
Acute:	LC50	>100		could not be calculated
(mortality)	LC25	>100		could not be calculated

Notes: LC25 & LC50, concentrations lethal to 25% and 50% of the test population




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Test Conditions

Client: ALS106 Reference: 08-1781-01-TRD

Method: Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout, 2000. Environment Canada, EPS 1/RM/13. Second Edition (amended May 2007).

Test type: Trout 96-h Static Acute Test (HQ 4.4.4.1)

Species: *Oncorhynchus mykiss*

Organism source: Sun Valley Trout Farms (Batch 20080903TR)

Acclimation: 37 days (must be ≥ 2 weeks)

Stock mortality: 0.05% (seven days preceeding testing)

Sample initial chemistry: pH: 8.1; EC: 390 ($\mu\text{S}/\text{cm}$); DO: 8.7 (mg/L); temperature: 16 °C
hardness (mg CaCO_3/L): 59; colour: colourless; odour: odourless

Sample holding time: 4 days (must be ≤ 5 days)

Sample storage: 4 $\pm$ 2°C in darkness

Test vessel: The test was conducted in 22 L plastic pails with polyethylene liners

Test volume: 17 Litres (depth of solution in each test vessel $\geq 15\text{cm}$)

Sample pre-treatment: All test solutions and controls were pre-aerated for 30 minutes
Dissolved oxygen in 100 % sample was 9 mg/L after pre-aeration
The sample was not filtered or pH adjusted prior to or during testing

Loading density: 0.365 g/Litre (must be ≤ 0.5 g/Litre)

Control/dilution water: Dechlorinated City of Calgary water acclimated to test conditions

Test concentrations: 5 effluent concentrations (6.3, 12.5, 25, 50, 100% (v/v) plus a negative control)

Test replicates: One replicate per treatment; 10 fish per replicate

Feeding: Fish are not fed 24 hours before test initiation and no feeding during test

Measurements: pH, conductivity, dissolved oxygen and temperature measured daily

Aeration: All treatments aerated at 6.5 $\pm$ 1 mL/min/L by oil-free compressed air
passed through airline tubes connected to disposable air stones

Lighting: Overhead full spectrum fluorescent lights; 100-500 lux at surface

Photoperiod: 16h light:8h dark

Test temperature: 15 $\pm$ 1°C

Endpoint: Mortality, 96-h LC50 (with 95% confidence limits)

Test validity: The control had 100% survival (must $\geq 90\%$)

Reference toxicant: 96-h test with Phenol ($\text{C}_6\text{H}_6\text{O}$) initiated September 18, 2008; current results
(96-h LC50 and 95% confidence limits) = 1.07 (1.02-1.11) log (mg/L Phenol)

Note: Outlined sections are protocol deviations explained on the comment page; v/v, volume per volume

Test Data

Client: ALS106
Reference: 08-1781-01-TRD

Test Log:

Date	Day	Time	Technician	Comment/Observation
2008/10/10	0	1045	D. Lalonde/ E. Vinish	test fish loaded at 1045 h
2008/10/11	1	1045	N. Lavoie. E. Vinish	all test fish appear normal
2008/10/12	2	1015	E. Vinish/ N. Lavoie	all test fish appear normal
2008/10/13	3	1100	E. Vinish/ N. Lavoie	all test fish appear normal
2008/10/14	4	0900	D. Lalonde/ E. Vinish	all test fish appear normal

Chemistry:

Conc. (%)	control	6.3	13	25	50	100		
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Day

pH (units)

Day	0	1	2	3	4		
0	7.6	7.6	7.5	7.5	7.6	7.6	
1	7.2	7.7	7.7	7.6	7.6	7.6	
2	7.5	7.5	7.5	7.5	7.5	7.5	
3	8.0	8.0	8.0	8.0	8.0	8.0	
4	7.9	8.0	8.0	8.0	7.9	7.9	

Conductivity (µS/cm)

Day	0	1	2	3	4		
0	272	276	282	293	315	358	
1	272	278	284	295	317	359	
2	271	279	284	296	316	359	
3	278	279	284	296	319	360	
4	265	276	285	297	319	365	

Dissolved Oxygen (mg/L)

Day	0	1	2	3	4		
0	8.8	9.2	9.2	9.1	9.0	9.0	
1	8.7	8.9	8.9	8.9	8.9	8.8	
2	8.9	8.9	9.0	9.0	9.0	9.1	
3	9.5	8.5	8.6	8.6	8.6	8.7	
4	9.4	9.4	9.5	9.5	9.5	9.5	

Temperature (°C)

Day	0	1	2	3	4		
0	15	15	15	15	15	15	
1	15	15	15	15	15	15	
2	15	15	15	15	15	15	
3	15	15	15	15	15	15	
4	14	14	14	14	14	14	

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Test Data

Client: ALS106
Reference: 08-1781-01-TRD

Number Alive:

Conc. (%)	control	6.3	13	25	50	100		
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Day

0	10	10	10	10	10	10		
1	10	10	10	10	10	10		
2	10	10	10	10	10	10		
3	10	10	10	9	10	10		
4	10	10	9	9	10	10		

Mortality (%)

4	0	0	10	10	0	0		
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Biology Summary Tables:

Control Fish	Length (cm)	Wet Weight(g)
1	4.2	0.7
2	4.1	0.6
3	4.3	0.8
4	4.3	0.7
5	3.7	0.5
6	3.9	0.5
7	3.8	0.5
8	4.2	0.7
9	3.7	0.5
10	4.3	0.7

Conc. (%)	Group Wet Weight (g)
control	6.2
6.3	6.2
13	5.4
25	5.3
50	6.6
100	6.7

average	4.1	0.6
sd	0.3	0.1
cv(%)	6.2	18.3

Notes: nd, not done; na, not applicable;
 sd, standard deviation; cv(%), coefficient
 of variation

Comments/Statistics

Client: ALS106 Reference: 08-1781-01-TRD

Test Result Comments:

None

Data Analysis:

Endpoints for mortality could not be calculated. No effect occurred.

Protocol Deviations:

None

Test Method: Trout 96h Static Acute Test. (LC50, five or more treatments plus a control)
 HydroQual Test Method Manual, section: 4.4.4.1

Reference: Biological Test Method: Reference Method for Determining Acute Lethality of
 Effluents to Rainbow Trout, 1990. Environment Canada, EPS 1/RM/13.
 including May 1996 and December 2000 amendments.

Test Organism:

test species: *Oncorhynchus mykiss*
 culture source: Sun Valley
 temperature (°C): 15 ± 1
 dissolved oxygen: saturated
 stock mortality (last 7d): 0.32%
 batch number: 20080903TR

Test Design:

vol. of test vessel (L): 22
 test volume depth: >15 cm
 replicates per treatment: 1
 fingerlings per replicate: 10
 loading (g fish/L): <0.5
 temperature (°C): 15 ± 1
 photoperiod: 16h light: 8h dark
 light level (water surface): 100-500 lux
 control/dilution water: dechlorinated tap water

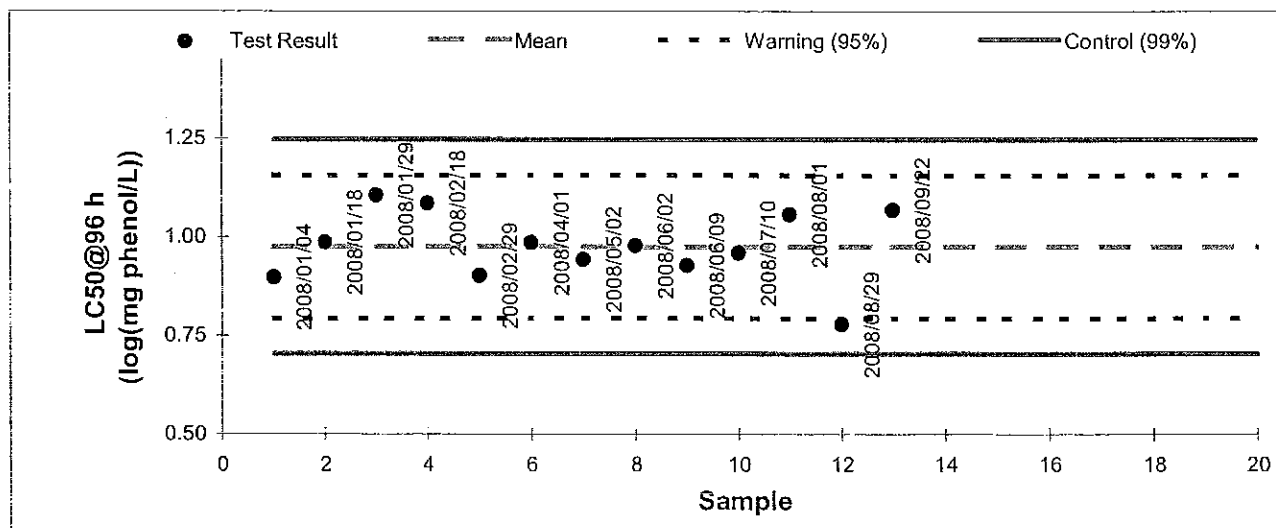
Current Test

toxicant phenol (C ₆ H ₅ OH)				
started on 2008/09/18		ended on 2008/09/22		
Result (LC50 @ 96h)	1.07	log (mg phenol/L); geometric mean		
Confidence Limits (95%)	lower	1.02	upper	1.11

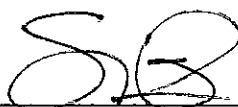
Historical Values

mean	0.97	sd	0.09	cv(%):	9
	lower	upper			
warning limits (±2 sd)	0.79	1.16	(95% confidence limits)		
control limits (±3 sd)	0.70	1.25	(99% confidence limits)		

notes: sd, standard deviation; cv, coefficient of variance



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 The test data and results are verified correct.

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Environmental Division

Certificate of Analysis

HOPE BAY MINING LTD

ATTN: MATT KAWEI

300, 889 HARBOURSIDE DRIVE

NORTH VANCOUVER BC V7P 3S1

Reported On: 02-OCT-08 10:06 AM

Lab Work Order #: **L682590**

Date Received: **15-SEP-08**

Project P.O. #: M00357 LINE #1

Job Reference: COMPLIANCE WATER SAMPLES

Legal Site Desc:

CofC Numbers:

Other Information:

Comments:

JESSICA SPIRA
Senior Account Manager

THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE WRITTEN AUTHORITY OF THE LABORATORY.
ALL SAMPLES WILL BE DISPOSED OF AFTER 30 DAYS FOLLOWING ANALYSIS. PLEASE CONTACT THE LAB IF YOU
REQUIRE ADDITIONAL SAMPLE STORAGE TIME.

ALS Canada Ltd. (formerly ETL Chemspec Analytical Ltd.)
Part of the **ALS Laboratory Group**

9936-67 Avenue, Edmonton, AB T6E 0P5

Phone: +1 780 413 5227 Fax: +1 780 437 2311 www.alsglobal.com

A Campbell Brothers Limited Company

ALS LABORATORY GROUP ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	By	Batch
L682590-1	BOS-1								
Sampled By: DARCY K on 15-SEP-08 @ 11:00									
Matrix: WATER									
	Biochemical Oxygen Demand	<2		2	mg/L		17-SEP-08	LD	R727031
	Chemical Oxygen Demand	15		5	mg/L		19-SEP-08	LJD	R726153
	Oil and Grease	<1		1	mg/L		19-SEP-08	FOD	R726157
	Phosphorus, Total	<0.02		0.02	mg/L	18-SEP-08	18-SEP-08	AYX	R725681
	Total Suspended Solids	<3		3	mg/L		19-SEP-08	SVG	R726125
Total Nitrogen									
	Nitrogen, Total	0.3		0.2	mg/L		19-SEP-08		
	Total Kjeldahl Nitrogen	0.3		0.2	mg/L	18-SEP-08	19-SEP-08	LMK	R725898
Routine Water: Major Ions, Fluoride									
Chloride (Cl)									
	Chloride (Cl)	11		1	mg/L		18-SEP-08	KFA	R725549
Fluoride (F)									
	Fluoride (F)	<0.05		0.05	mg/L		19-SEP-08	CLTT	R725862
ICP metals and SO4 for routine water									
	Calcium (Ca)	5.1		0.5	mg/L		18-SEP-08	EOC	R725568
	Potassium (K)	1.0		0.5	mg/L		18-SEP-08	EOC	R725568
	Magnesium (Mg)	2.3		0.1	mg/L		18-SEP-08	EOC	R725568
	Sodium (Na)	6		1	mg/L		18-SEP-08	EOC	R725568
	Sulfate (SO4)	1.9		0.5	mg/L		18-SEP-08	EOC	R725568
Ion Balance Calculation									
	Ion Balance	Low EC			%		21-SEP-08		
	TDS (Calculated)	33			mg/L		21-SEP-08		
	Hardness (as CaCO3)	22			mg/L		21-SEP-08		
	Nitrate+Nitrite-N	<0.1		0.1	mg/L		18-SEP-08	JXD	R725699
	Nitrate-N	<0.1		0.1	mg/L		18-SEP-08	JXD	R725699
	Nitrite-N	<0.05		0.05	mg/L		18-SEP-08	JXD	R725699
pH, Conductivity and Total Alkalinity									
	pH	7.0		0.1	pH		19-SEP-08	CLTT	R725862
	Conductivity (EC)	66.9		0.2	uS/cm		19-SEP-08	CLTT	R725862
	Bicarbonate (HCO3)	10		5	mg/L		19-SEP-08	CLTT	R725862
	Carbonate (CO3)	<5		5	mg/L		19-SEP-08	CLTT	R725862
	Hydroxide (OH)	<5		5	mg/L		19-SEP-08	CLTT	R725862
	Alkalinity, Total (as CaCO3)	9		5	mg/L		19-SEP-08	CLTT	R725862
L682590-2	BOS-3								
Sampled By: DARCY K on 15-SEP-08 @ 11:15									
Matrix: WATER									
	Biochemical Oxygen Demand	179		2	mg/L		17-SEP-08	LD	R727031
	Chemical Oxygen Demand	466		5	mg/L		19-SEP-08	LJD	R726153
	Oil and Grease	45		1	mg/L		19-SEP-08	FOD	R726157
	Phosphorus, Total	8.78		0.02	mg/L	18-SEP-08	18-SEP-08	AYX	R725681
	Total Suspended Solids	62		3	mg/L		19-SEP-08	SVG	R726125
Total Nitrogen									
	Nitrogen, Total	92.7		0.2	mg/L		19-SEP-08		
	Total Kjeldahl Nitrogen	92.7		0.2	mg/L	18-SEP-08	19-SEP-08	LMK	R725898
Routine Water: Major Ions, Fluoride									
Chloride (Cl)									
	Chloride (Cl)	75		1	mg/L		18-SEP-08	KFA	R725549
Fluoride (F)									
	Fluoride (F)	0.06		0.05	mg/L		18-SEP-08	CLTT	R724340

ALS LABORATORY GROUP ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	By	Batch
L682590-2 BOS-3 Sampled By: DARCY K on 15-SEP-08 @ 11:15 Matrix: WATER Routine Water: Major Ions, Fluoride ICP metals and SO4 for routine water									
Calcium (Ca)		8.9		0.5	mg/L		18-SEP-08	EOC	R725568
Potassium (K)		22.2		0.5	mg/L		18-SEP-08	EOC	R725568
Magnesium (Mg)		3.5		0.1	mg/L		18-SEP-08	EOC	R725568
Sodium (Na)		73		1	mg/L		18-SEP-08	EOC	R725568
Sulfate (SO4)		37.2		0.5	mg/L		18-SEP-08	EOC	R725568
Ion Balance Calculation									
Ion Balance		44.9	BL:INT		%		19-SEP-08		
TDS (Calculated)		432			mg/L		19-SEP-08		
Hardness (as CaCO3)		37			mg/L		19-SEP-08		
Nitrate+Nitrite-N		<0.1		0.1	mg/L		18-SEP-08	JXD	R725699
Nitrate-N		<0.1		0.1	mg/L		18-SEP-08	JXD	R725699
Nitrite-N		<0.05		0.05	mg/L		18-SEP-08	JXD	R725699
pH, Conductivity and Total Alkalinity									
pH		7.6		0.1	pH		18-SEP-08	CLTT	R724340
Conductivity (EC)		1020		0.2	uS/cm		18-SEP-08	CLTT	R724340
Bicarbonate (HCO3)		431		5	mg/L		18-SEP-08	CLTT	R724340
Carbonate (CO3)		<5		5	mg/L		18-SEP-08	CLTT	R724340
Hydroxide (OH)		<5		5	mg/L		18-SEP-08	CLTT	R724340
Alkalinity, Total (as CaCO3)		353		5	mg/L		18-SEP-08	CLTT	R724340
L682590-3 BOS-4 Sampled By: DARCY K on 15-SEP-08 @ 11:30 Matrix: WATER									
Biochemical Oxygen Demand		<2		2	mg/L		17-SEP-08	LD	R727031
Chemical Oxygen Demand		14		5	mg/L		19-SEP-08	LJD	R726153
Daphnia Magna		See Attached					15-SEP-08	AP	R731117
Oil and Grease		<1		1	mg/L		19-SEP-08	FOD	R726157
Phosphorus, Total		0.04		0.02	mg/L	18-SEP-08	18-SEP-08	AYX	R725681
Total Suspended Solids		14		3	mg/L		19-SEP-08	SVG	R726125
Total Nitrogen									
Nitrogen, Total		0.6		0.2	mg/L		19-SEP-08		
Total Kjeldahl Nitrogen		0.6		0.2	mg/L	18-SEP-08	19-SEP-08	LMK	R725898
Routine Water: Major Ions, Fluoride									
Chloride (Cl)									
Chloride (Cl)		14		1	mg/L		18-SEP-08	KFA	R725549
Fluoride (F)									
Fluoride (F)		<0.05		0.05	mg/L		18-SEP-08	CLTT	R724340
ICP metals and SO4 for routine water									
Calcium (Ca)		3.7		0.5	mg/L		18-SEP-08	EOC	R725568
Potassium (K)		1.1		0.5	mg/L		18-SEP-08	EOC	R725568
Magnesium (Mg)		1.7		0.1	mg/L		18-SEP-08	EOC	R725568
Sodium (Na)		5		1	mg/L		18-SEP-08	EOC	R725568
Sulfate (SO4)		0.5		0.5	mg/L		18-SEP-08	EOC	R725568
Ion Balance Calculation									
Ion Balance		Low EC			%		19-SEP-08		
TDS (Calculated)		31			mg/L		19-SEP-08		
Hardness (as CaCO3)		16			mg/L		19-SEP-08		
Nitrate+Nitrite-N		<0.1		0.1	mg/L		18-SEP-08	JXD	R725699
Nitrate-N		<0.1		0.1	mg/L		18-SEP-08	JXD	R725699

ALS LABORATORY GROUP ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	By	Batch
L682590-3 BOS-4 Sampled By: DARCY K on 15-SEP-08 @ 11:30 Matrix: WATER Routine Water: Major Ions, Fluoride	Nitrite-N	<0.05		0.05	mg/L		18-SEP-08	JXD	R725699
	pH, Conductivity and Total Alkalinity								
	pH	6.9		0.1	pH		18-SEP-08	CLTT	R724340
	Conductivity (EC)	73.4		0.2	uS/cm		18-SEP-08	CLTT	R724340
	Bicarbonate (HCO3)	10		5	mg/L		18-SEP-08	CLTT	R724340
	Carbonate (CO3)	<5		5	mg/L		18-SEP-08	CLTT	R724340
	Hydroxide (OH)	<5		5	mg/L		18-SEP-08	CLTT	R724340
	Alkalinity, Total (as CaCO3)	8		5	mg/L		18-SEP-08	CLTT	R724340
L682590-4 HOP-1 Sampled By: DARCY K on 15-SEP-08 @ 08:15 Matrix: WATER	Biochemical Oxygen Demand	<2		2	mg/L		17-SEP-08	LD	R727031
	Chemical Oxygen Demand	<5		5	mg/L		19-SEP-08	LJD	R726153
	Oil and Grease	<1		1	mg/L		19-SEP-08	FOD	R726157
	Phosphorus, Total	<0.02		0.02	mg/L	18-SEP-08	18-SEP-08	AYX	R725681
	Total Suspended Solids	<3		3	mg/L		19-SEP-08	SVG	R726125
	Total Nitrogen								
	Nitrogen, Total	<0.2		0.2	mg/L		19-SEP-08		
	Total Kjeldahl Nitrogen	<0.2		0.2	mg/L	18-SEP-08	19-SEP-08	LMK	R725898
	Routine Water: Major Ions, Fluoride								
	Chloride (Cl)								
	Chloride (Cl)	96		1	mg/L		18-SEP-08	KFA	R725549
	Fluoride (F)								
	Fluoride (F)	0.08		0.05	mg/L		18-SEP-08	CLTT	R724340
	ICP metals and SO4 for routine water								
	Calcium (Ca)	11.8		0.5	mg/L		18-SEP-08	EOC	R725568
	Potassium (K)	3.6		0.5	mg/L		18-SEP-08	EOC	R725568
	Magnesium (Mg)	10.0		0.1	mg/L		18-SEP-08	EOC	R725568
	Sodium (Na)	50		1	mg/L		18-SEP-08	EOC	R725568
	Sulfate (SO4)	6.2		0.5	mg/L		18-SEP-08	EOC	R725568
	Ion Balance Calculation								
	Ion Balance	96.2			%		19-SEP-08		
	TDS (Calculated)	207			mg/L		19-SEP-08		
	Hardness (as CaCO3)	71			mg/L		19-SEP-08		
	Nitrate+Nitrite-N	<0.1		0.1	mg/L		18-SEP-08	JXD	R725699
	Nitrate-N	<0.1		0.1	mg/L		18-SEP-08	JXD	R725699
	Nitrite-N	<0.05		0.05	mg/L		18-SEP-08	JXD	R725699
	pH, Conductivity and Total Alkalinity								
	pH	7.8		0.1	pH		18-SEP-08	CLTT	R724340
	Conductivity (EC)	432		0.2	uS/cm		18-SEP-08	CLTT	R724340
	Bicarbonate (HCO3)	60		5	mg/L		18-SEP-08	CLTT	R724340
	Carbonate (CO3)	<5		5	mg/L		18-SEP-08	CLTT	R724340
	Hydroxide (OH)	<5		5	mg/L		18-SEP-08	CLTT	R724340
	Alkalinity, Total (as CaCO3)	49		5	mg/L		18-SEP-08	CLTT	R724340
L682590-5 HOP-2 Sampled By: DARCY K on 15-SEP-08 @ 10:15 Matrix: WATER									
	Biochemical Oxygen Demand	240		2	mg/L		17-SEP-08	LD	R727031

ALS LABORATORY GROUP ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	By	Batch
L682590-5	HOP-2								
Sampled By: DARCY K on 15-SEP-08 @ 10:15									
Matrix: WATER									
	Chemical Oxygen Demand	602		5	mg/L		19-SEP-08	LJD	R726153
	Oil and Grease	13		1	mg/L		19-SEP-08	FOD	R726157
	Phosphorus, Total	8.85		0.02	mg/L	18-SEP-08	18-SEP-08	AYX	R725681
	Total Suspended Solids	286		3	mg/L		19-SEP-08	SVG	R726125
Total Nitrogen									
	Nitrogen, Total	95.9		0.2	mg/L		19-SEP-08		
	Total Kjeldahl Nitrogen	95.9		0.2	mg/L	18-SEP-08	19-SEP-08	LMK	R725898
Routine Water: Major Ions, Fluoride									
Chloride (Cl)									
	Chloride (Cl)	149		1	mg/L		18-SEP-08	KFA	R725549
Fluoride (F)									
	Fluoride (F)	0.10		0.05	mg/L		18-SEP-08	CLTT	R724340
ICP metals and SO4 for routine water									
	Calcium (Ca)	18.5		0.5	mg/L		18-SEP-08	EOC	R725568
	Potassium (K)	26.0		0.5	mg/L		18-SEP-08	EOC	R725568
	Magnesium (Mg)	11.5		0.1	mg/L		18-SEP-08	EOC	R725568
	Sodium (Na)	104		1	mg/L		18-SEP-08	EOC	R725568
	Sulfate (SO4)	44.0		0.5	mg/L		18-SEP-08	EOC	R725568
Ion Balance Calculation									
	Ion Balance	62.9	BL:INT		%		19-SEP-08		
	TDS (Calculated)	536			mg/L		19-SEP-08		
	Hardness (as CaCO3)	94			mg/L		19-SEP-08		
	Nitrate+Nitrite-N	<0.1		0.1	mg/L		18-SEP-08	JXD	R725699
	Nitrate-N	<0.1		0.1	mg/L		18-SEP-08	JXD	R725699
	Nitrite-N	<0.05		0.05	mg/L		18-SEP-08	JXD	R725699
pH, Conductivity and Total Alkalinity									
	pH	7.5		0.1	pH		18-SEP-08	CLTT	R724340
	Conductivity (EC)	1180		0.2	uS/cm		18-SEP-08	CLTT	R724340
	Bicarbonate (HCO3)	372		5	mg/L		18-SEP-08	CLTT	R724340
	Carbonate (CO3)	<5		5	mg/L		18-SEP-08	CLTT	R724340
	Hydroxide (OH)	<5		5	mg/L		18-SEP-08	CLTT	R724340
	Alkalinity, Total (as CaCO3)	305		5	mg/L		18-SEP-08	CLTT	R724340
L682590-6	HOP-3								
Sampled By: DARCY K on 15-SEP-08 @ 09:45									
Matrix: WATER									
	Biochemical Oxygen Demand	<2		2	mg/L		17-SEP-08	LD	R727031
	Chemical Oxygen Demand	<5		5	mg/L		19-SEP-08	LJD	R726153
	Daphnia Magna	See Attached					15-SEP-08	AP	R731117
	Oil and Grease	<1		1	mg/L		19-SEP-08	FOD	R726157
	Phosphorus, Total	0.02		0.02	mg/L	18-SEP-08	18-SEP-08	AYX	R725681
	Total Suspended Solids	3		3	mg/L		19-SEP-08	SVG	R726125
Total Nitrogen									
	Nitrogen, Total	<0.2		0.2	mg/L		19-SEP-08		
	Total Kjeldahl Nitrogen	<0.2		0.2	mg/L	18-SEP-08	19-SEP-08	LMK	R725898
Routine Water: Major Ions, Fluoride									
Chloride (Cl)									
	Chloride (Cl)	95		1	mg/L		18-SEP-08	KFA	R725549
Fluoride (F)									
	Fluoride (F)	0.08		0.05	mg/L		18-SEP-08	CLTT	R724340

ALS LABORATORY GROUP ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	By	Batch
L682590-6 HOP-3 Sampled By: DARCY K on 15-SEP-08 @ 09:45 Matrix: WATER Routine Water: Major Ions, Fluoride ICP metals and SO4 for routine water									
Calcium (Ca)		11.6		0.5	mg/L		18-SEP-08	EOC	R725568
Potassium (K)		3.8		0.5	mg/L		18-SEP-08	EOC	R725568
Magnesium (Mg)		9.9		0.1	mg/L		18-SEP-08	EOC	R725568
Sodium (Na)		53		1	mg/L		18-SEP-08	EOC	R725568
Sulfate (SO4)		6.6		0.5	mg/L		18-SEP-08	EOC	R725568
Ion Balance Calculation									
Ion Balance		100			%		19-SEP-08		
TDS (Calculated)		209			mg/L		19-SEP-08		
Hardness (as CaCO3)		70			mg/L		19-SEP-08		
Nitrate+Nitrite-N		<0.1		0.1	mg/L		18-SEP-08	JXD	R725699
Nitrate-N		<0.1		0.1	mg/L		18-SEP-08	JXD	R725699
Nitrite-N		<0.05		0.05	mg/L		18-SEP-08	JXD	R725699
pH, Conductivity and Total Alkalinity									
pH		7.8		0.1	pH		18-SEP-08	CLTT	R724340
Conductivity (EC)		429		0.2	uS/cm		18-SEP-08	CLTT	R724340
Bicarbonate (HCO3)		59		5	mg/L		18-SEP-08	CLTT	R724340
Carbonate (CO3)		<5		5	mg/L		18-SEP-08	CLTT	R724340
Hydroxide (OH)		<5		5	mg/L		18-SEP-08	CLTT	R724340
Alkalinity, Total (as CaCO3)		48		5	mg/L		18-SEP-08	CLTT	R724340
L682590-7 DORIS ST-7 (LAKE SURFACE WATER) Sampled By: DARCY K on 15-SEP-08 @ 08:45 Matrix: WATER									
Biochemical Oxygen Demand		<2		2	mg/L		17-SEP-08	LD	R727031
Chemical Oxygen Demand		13		5	mg/L		19-SEP-08	LJD	R726153
Oil and Grease		<1		1	mg/L		19-SEP-08	FOD	R726157
Phosphorus, Total		0.03		0.02	mg/L	18-SEP-08	18-SEP-08	AYX	R725681
Total Suspended Solids		5		3	mg/L		19-SEP-08	SVG	R726125
Total Nitrogen									
Nitrogen, Total		0.6		0.2	mg/L		19-SEP-08		
Total Kjeldahl Nitrogen		0.6		0.2	mg/L	18-SEP-08	19-SEP-08	LMK	R725898
Routine Water: Major Ions, Fluoride									
Chloride (Cl)									
Chloride (Cl)		70		1	mg/L		18-SEP-08	KFA	R725549
Fluoride (F)									
Fluoride (F)		0.06		0.05	mg/L		18-SEP-08	CLTT	R724340
ICP metals and SO4 for routine water									
Calcium (Ca)		9.8		0.5	mg/L		18-SEP-08	EOC	R725568
Potassium (K)		2.1		0.5	mg/L		18-SEP-08	EOC	R725568
Magnesium (Mg)		7.0		0.1	mg/L		18-SEP-08	EOC	R725568
Sodium (Na)		33		1	mg/L		18-SEP-08	EOC	R725568
Sulfate (SO4)		4.0		0.5	mg/L		18-SEP-08	EOC	R725568
Ion Balance Calculation									
Ion Balance		94.0			%		19-SEP-08		
TDS (Calculated)		146			mg/L		19-SEP-08		
Hardness (as CaCO3)		53			mg/L		19-SEP-08		
Nitrate+Nitrite-N		<0.1		0.1	mg/L		18-SEP-08	JXD	R725699
Nitrate-N		<0.1		0.1	mg/L		18-SEP-08	JXD	R725699
Nitrite-N		<0.05		0.05	mg/L		18-SEP-08	JXD	R725699

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Qualifiers for Sample Submission Listed:

Qualifier	Description
EHT	BOD,N2N3,NO3,NO2,pH - Exceeded Recommended Holding Time Prior To Analysis

Sample Parameter Qualifier key listed:

Qualifier	Description
BL:INT	Balance Reviewed: Interference Or Non-Measured Component

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Preparation Method Reference(Based On)	Analytical Method Reference(Based On)
BOD-ED	Water	Biochemical Oxygen Demand (BOD)		APHA 5210 B-5 day Incub.-O2 electrode
CL-ED	Water	Chloride (Cl)		APHA 4500 Cl E-Colorimetry
COD-ED	Water	Chemical Oxygen Demand		APHA 5220 D-Micro Colorimetry
DAPHNIA-AP	Misc.	Daphnia Magna Bioassay		See sublet lab's report
ETL-N-TOT-CALC-ED	Water	Nitrogen, Total		APHA 4500 N-Calculated
ETL-ROUTINE-ICP-ED	Water	ICP metals and SO4 for routine water		APHA 3120 B-ICP-OES
F-ED	Water	Fluoride (F)		APHA 4500 F-C-Electrode
IONBALANCE-ED	Water	Ion Balance Calculation		APHA 1030E
N-TOTKJ-ED	Water	Total Kjeldahl Nitrogen		APHA 4500N-C -Dig.-Auto-Colorimetry
N2N3-ED	Water	Nitrate+Nitrite-N		APHA 4500 NO3-H - COLORIMETRY
NO2-ED	Water	Nitrite-N		APHA 4500 NO2B-Colorimetry
NO3-ED	Water	Nitrate-N		APHA 4500 NO3H-Colorimetry
OGG-ED	Water	Oil and Grease-Gravimetric		APHA 5520 G HEXANE MTBE EXT. GRAVIME
P-TOTAL-ED	Water	Phosphorus, Total		APHA 4500 P B,E-Auto-Colorimetry
PH/EC/ALK-ED	Water	pH, Conductivity and Total Alkalinity		APHA 4500-H, 2510, 2320
SOLIDS-TOTSUS-ED	Water	Total Suspended Solids		APHA 2540 D-Gravimetric

** Laboratory Methods employed follow in-house procedures, which are generally based on nationally or internationally accepted methodologies.

Chain of Custody numbers:

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
AP	ALPHA LABS	ED	ALS LABORATORY GROUP - EDMONTON, ALBERTA, CANADA

Reference Information

GLOSSARY OF REPORT TERMS

Surr - A surrogate is an organic compound that is similar to the target analyte(s) in chemical composition and behavior but not normally detected in environmental samples. Prior to sample processing, samples are fortified with one or more surrogate compounds.

The reported surrogate recovery value provides a measure of method efficiency. The Laboratory control limits are determined under column heading D.L.

mg/kg (units) - unit of concentration based on mass, parts per million.

mg/L (units) - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

UNLESS OTHERWISE STATED, SAMPLES ARE NOT CORRECTED FOR CLIENT FIELD BLANKS.

Although test results are generated under strict QA/QC protocols, any unsigned test reports, faxes, or emails are considered preliminary.

ALS Laboratory Group has an extensive QA/QC program where all analytical data reported is analyzed using approved referenced procedures followed by checks and reviews by senior managers and quality assurance personnel. However, since the results are obtained from chemical measurements and thus cannot be guaranteed, ALS Laboratory Group assumes no liability for the use or interpretation of the results.

alpha**ALPHA LABORATORY SERVICES LTD.****Analytical and Consulting Services**

17225 - 109 Avenue

Edmonton, Alberta T5S 1H7

Phone: (780) 489-9100 Fax: (780) 489-9700

TECHNICAL REPORT**Bioassay**

To: **ALS Laboratory Group**
9936 67 Avenue
Edmonton AB T6E 0P5

File: **29951a**
Date: **September 29, 2008**
Client PO: **682 590**
Attention: **Jessica Spira**

Project: **L 682 590****1. SAMPLE INFORMATION**

Sample Origin:	Hope Bay Mining Ltd.
Sample Description:	BOS-4
Sampling Date and Time:	Sept. 15/08 @ Time not supplied
Sampling Method:	Grab
Sampled By:	D.K.
Container(s) Description:	2. 1 L amber glass bottle
Sample Volume (L):	2
Date and Time Received:	Sept. 18/08 @ 1000 hrs.
Transit Irregularities:	None

2. TEST INFORMATION

Test Organism:	Daphnia magna (neonates)
Test Description:	Acute, 48-hour, static, multi-dilution (LC₅₀)
Test Method Procedure:	15.4.8710.20
Reference Method:	EPS1/RM/14, July 1990, Amended December 2000 Environment Canada
Performed By:	Bonnie Martin
Starting Date and Time:	Sept. 18/08 @ 1250 hrs.
Source of Holding/Dilution Water:	Dechlorinated City of Edmonton tap water
Container Description:	250 mL, Borosilicate Glass
Control/Dilution Water Hardness (mg/L CaCO ₃):	170
Test Solution Volume (mL):	200
Number of Test Organisms/Container:	10
pH Adjustment:	Test solutions are not to be pH adjusted.
Deviations from Reference Method:	None

alpha**ALPHA LABORATORY SERVICES LTD.**

File: 29951a

Analytical and Consulting Services

17225 - 109 Avenue

Edmonton, Alberta T5S 1H7

Phone: (780) 489-9100 Fax: (780) 489-9700

TECHNICAL REPORT**3. LABORATORY ANALYSIS OF SAMPLE WHEN RECEIVED**

Observations	Colour:	Pale/yellow
	Odour:	None evident
	Turbidity:	Slight
	Solids:	Small amount of settleable solids
Temperature (°C):		10.4
pH:		6.60
Conductivity @ 25°C (µmhos/cm):		43.4
Dissolved Oxygen (mg/L):		12.53
Hardness (mg/L CaCO ₃):		19

4. PRE-AERATIONDuration at 25 - 50 mL/min* L^{-1} (min): 30

		<u>100% Sample Test</u>	<u>0% Sample Test</u>
		<u>Concentration v/v</u>	<u>Concentration v/v</u>
Before Pre-Aeration	Dissolved Oxygen (mg/L):	12.53	8.34
	Air Saturation (%):	150	100
After Pre-Aeration	Dissolved Oxygen (mg/L):	8.36	--
	Air Saturation (%):	100	--

5. TEST ORGANISM DATA

Parent Lot Number:	080825
Weekly Mortality Preceding Test (%):	<10
Health Test Starting Date:	August 26, 2008
Average Time to First Brood (d):	10
Average Number of Neonates/Brood:	13
Average Number of Broods/Test:	4
Sample Size:	4

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TECHNICAL REPORT**6. TEST DATA**

Sample Concentration	(v/v)%	100	80	60	40	20	0
Time:	0 hours						
Temperature	(°C)	21.1	21.1	21.1	21.1	21.1	21.1
pH		7.70	7.74	7.82	7.90	7.94	7.92
Conductivity @ 25°C	(µmhos/cm)	86.0	152	213	271	323	364
Dissolved Oxygen	(mg/L)	8.35	8.36	8.28	8.35	8.34	8.35
Time:	24 hours						
% Immobility		0/0	0	0	0	0	0/0
% Mortality		0/0	0	0	0	0	0/0
Temperature	(°C)	20.8	20.8	20.8	20.8	20.8	20.8
Time:	48 hours						
% Immobility		0/0	0	0	0	0	0/0
% Mortality		0/0	0	0	0	0	0/0
Temperature	(°C)	20.0	20.0	20.0	20.0	20.0	20.0
pH		7.84	7.94	8.05	8.06	8.17	8.19
Conductivity @ 25°C	(µmhos/cm)	95.7	164	223	282	346	400
Dissolved Oxygen	(mg/L)	7.70	7.75	7.78	7.73	7.67	7.61

7. REPLICATION

Sample Concentration v/v (%):	100	0
Average Immobility at 48 hours (%):	0	0
Average Mortality at 48 hours (%):	0	0

8. SUBLETHAL BIOLOGICAL EFFECTS

Sample	Time(s)	
Concentration v/v	Observed (h)	Effect(s) Observed
(%)		
--	--	None

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TECHNICAL REPORT**9. OBSERVATIONS/COMMENTS**

None

10. RESULTS

48-hour LC ₅₀ v/v (%):	>100
95% Lower Confidence Interval v/v (%):	--
95% Upper Confidence Interval v/v (%):	--
Method of Calculation:	--
Confirmed by Graph:	--
48-hour EC ₅₀ (Immobility) v/v (%):	>100
95% Lower Confidence Interval v/v (%):	--
95% Upper Confidence Interval v/v (%):	--
Method of Calculation:	--
Confirmed by Graph:	--

11. REFERENCE TOXICANT DATA

Toxicant:	Chromium
Test Starting Date:	September 16, 2008
48-hour LC ₅₀ (mg/L):	0.095
95% Lower Confidence Interval (mg/L):	0.079
95% Upper Confidence Interval (mg/L):	0.111
Method of Calculation:	Stephan LC ₅₀ Computer Program, Probit method
Confirmed by Graph:	Yes
Historic Geometric Mean LC ₅₀ (mg/L):	0.114
95% Lower Confidence Interval (mg/L):	0.086
95% Upper Confidence Interval (mg/L):	0.142

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TECHNICAL REPORT

Analysis Verified and
Report Authorized by:

Bonnie Martin

Bonnie Martin
Supervisor

Note: All samples will be disposed of 30 days after analysis. Please advise the laboratory if you require additional sample storage time.

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TECHNICAL REPORT**Bioassay**

To: **ALS Laboratory Group**
9936 67 Avenue
Edmonton AB T6E 0P5

File: **29951b**
Date: **September 29, 2008**
Client PO: **682 590**
Attention: **Nhan Nguyen**

Project: **L 682 590**

1. SAMPLE INFORMATION

Sample Origin:	Hope Bay Mining Ltd.
Sample Description:	HOP-3
Sampling Date and Time:	Sept. 15/08 @ Time not supplied
Sampling Method:	Grab
Sampled By:	D.K.
Container(s) Description:	2, 1 L HDPE amber glass bottles
Sample Volume (L):	2
Date and Time Received:	Sept. 18/08 @ 1000 hrs.
Transit Irregularities:	None

2. TEST INFORMATION

Test Organism:	Daphnia magna (neonates)
Test Description:	Acute, 48-hour, static, multi-dilution (LC₅₀)
Test Method Procedure:	15.4.8710.20
Reference Method:	EPS1/RM/14, Second Edition – December 2000 Environment Canada
Performed By:	Bonnie Martin
Starting Date and Time:	Sept. 18/08 @ 1300 hrs.
Source of Holding/Dilution Water:	Dechlorinated City of Edmonton tap water
Container Description:	250 mL, Borosilicate Glass
Control/Dilution Water Hardness (mg/L CaCO ₃):	170
Test Solution Volume (mL):	200
Number of Test Organisms/Container:	10
pH Adjustment:	Test solutions are not to be pH adjusted.
Deviations from Reference Method:	None

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TECHNICAL REPORT**3. LABORATORY ANALYSIS OF SAMPLE WHEN RECEIVED**

Observations	Colour:	None evident
	Odour:	None evident
	Turbidity:	Slight
	Solids:	Small amount of settleable solids
Temperature (°C):		14.9
pH:		7.14
Conductivity @ 25°C (µmhos/cm):		440
Dissolved Oxygen (mg/L):		11.71
Hardness (mg/L CaCO ₃):		69

4. PRE-AERATIONDuration at 25 - 50 mL/min•L⁻¹ (min): 30

		<u>100% Sample Test</u>	<u>0% Sample Test</u>
		<u>Concentration v/v</u>	<u>Concentration v/v</u>
Before Pre-Aeration	Dissolved Oxygen (mg/L):	11.71	8.34
	Air Saturation (%):	140	100
After Pre-Aeration	Dissolved Oxygen (mg/L):	8.31	--
	Air Saturation (%):	99	--

5. TEST ORGANISM DATA

Parent Lot Number:	080825
Weekly Mortality Preceding Test (%):	<10
Health Test Starting Date:	August 26, 2008
Average Time to First Brood (d):	10
Average Number of Neonates/Brood:	13
Average Number of Broods/Test:	4
Sample Size:	4

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TECHNICAL REPORT**6. TEST DATA**

Sample Concentration	(v/v)%	100	80	60	40	20	0
Time:	0 hours						
Temperature	(°C)	20.9	20.9	20.9	20.9	20.9	20.9
pH		7.79	7.81	7.86	7.90	7.91	7.91
Conductivity @ 25°C	(µmhos/cm)	427	414	402	415	392	363
Dissolved Oxygen	(mg/L)	8.31	8.33	8.32	8.31	8.34	8.36
Time:	24 hours						
% Immobility		0/0	0	0	0	0	0/0
% Mortality		0/0	0	0	0	0	0/0
Temperature	(°C)	20.8	20.8	20.8	20.8	20.8	20.8
Time:	48 hours						
% Immobility		0/0	0	0	0	0	0/0
% Mortality		0/0	0	0	0	0	0/0
Temperature	(°C)	20.5	20.5	20.5	20.5	20.5	20.5
pH		8.01	8.06	8.11	8.18	8.21	8.20
Conductivity @ 25°C	(µmhos/cm)	484	466	448	431	416	404
Dissolved Oxygen	(mg/L)	7.85	7.73	7.81	7.75	7.69	7.64

7. REPLICATION

Sample Concentration v/v (%):	100	0
Average Immobility at 48 hours (%):	0	0
Average Mortality at 48 hours (%):	0	0

8. SUBLETHAL BIOLOGICAL EFFECTS

Sample Concentration	Time(s)	
v/v (%)	Observed (h)	Effect(s) Observed
--	--	None

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TECHNICAL REPORT**9. OBSERVATIONS/COMMENTS**

None

10. RESULTS

48-hour LC_{50} v/v (%):	>100
95% Lower Confidence Interval v/v (%):	--
95% Upper Confidence Interval v/v (%):	--
Method of Calculation:	--
Confirmed by Graph:	--
48-hour EC_{50} (Immobility) v/v (%):	>100
95% Lower Confidence Interval v/v (%):	--
95% Upper Confidence Interval v/v (%):	--
Method of Calculation:	--
Confirmed by Graph:	--

11. REFERENCE TOXICANT DATA

Toxicant:	Chromium
Test Starting Date:	September 16, 2008
48-hour LC_{50} (mg/L):	0.095
95% Lower Confidence Interval (mg/L):	0.079
95% Upper Confidence Interval (mg/L):	0.111
Method of Calculation:	Stephan LC_{50} Computer Program, Probit method
Confirmed by Graph:	Yes
Historic Geometric Mean LC_{50} (mg/L):	0.114
95% Lower Confidence Interval (mg/L):	0.086
95% Upper Confidence Interval (mg/L):	0.142

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File: 29951b

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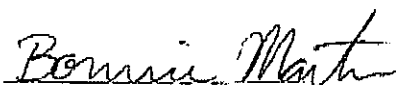
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Phone: (780) 489-9100 Fax: (780) 489-9700

TECHNICAL REPORT

Analysis Verified and
Report Authorized by:



Bonnie Martin
Supervisor

Note: All samples will be disposed of 30 days after analysis. Please advise the laboratory if you require additional sample storage time.

CHAIN OF CUSTODY FORM

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